

REMARKS

Applicant respectfully requests reconsideration. Claims 1, 3, 4, 6, 7, 9-16 and 20-37 were previously pending in this application. Claims 1 and 10 have been amended. No claims have been added or cancelled. As a result, claims 1, 3, 4, 6, 7, 9-16 and 20-37 are pending for examination with claims 1, 4, and 7 being independent claims. No new matter has been added.

Objections to the Claims

Claims 1, 4, 7 and 10 were objected to because the term "ADAM 12" should be followed with the term "protein" to make clear this particular molecule is being detected.

Applicant respectfully disagrees. Pending claims 1, 4, 7, and 10 are not limited to the detection of ADAM 12 protein, and encompass detection of other molecules such as ADAM 12 mRNA. Methods for detecting ADAM 12 protein and ADAM 12 mRNA are described, for example, on pages 10-19 of the application as filed. Applicant respectfully submits that pending claims 1, 4, 7, and 10 are not limited to the detection of ADAM 12 protein.

Accordingly, reconsideration and withdrawal of this objection is respectfully requested.

Rejections under 35 U.S.C. §112

Claims 1, 3, 10-16 and 20-25 are rejected 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

According to the Examiner, it is not clear how the absence of a non-present molecule is detected. Applicant has amended independent claims 1 and 10 to clarify claim language.

Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

Rejections Under 35 U.S.C. §103

Claims 1, 3, 4, 6, 7, 9-16 and 20-37 under 35 U.S.C. §103(a) are rejected as being unpatentable over Iba et al. (Am J. Pathol. 154(5):1489-501, May 1999), and further in view of Berger et al. (US Patent Application Publication No. 2003/0148410 A1, filed November 21, 2002) is maintained.

According to the Office Action, “[t]he claims do not include a detection step with any particular antibody, which could possibly discriminate between membrane-anchored long form (ADAM 12-L) and the short secreted form (ADAM 12-S), nor read on just urine” (Office Action at page 5).

Applicant respectfully disagrees and requests reconsideration of the rejection. The Supreme Court in KSR International Co. v. Teleflex Inc., 550 U.S. 398 (2007), 82 USPQ2d 1385 (2007) held that “... there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” (emphasis added). MPEP § 2142 states that “[t]he key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious.” MPEP § 2143.02 and established case law state that “[t]he prior art can be modified or combined to reject claims as prima facie obvious as long as there is a reasonable expectation of success. In re Merck & Co., Inc., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986)” (emphasis added).

Iba et al. dissuades one of ordinary skill in the art from detecting the presence of both ADAM 12-L and ADAM 12-S in the instantly claimed biological fluids obtained from a cancer patient. Iba et al. measured the distribution of ADAM 12 in a series of 37 tissue specimens from histologically confirmed cases of human carcinomas. According to Iba et al. the membrane-anchored form of ADAM 12 (ADAM 12-L) is up-regulated in breast carcinoma tissues while, the secreted form (ADAM 12-S) is present in both normal and tumor tissue. Because the secreted form of ADAM 12 does not differentiate between cancer and normal tissues, and because the membrane-bound form of ADAM 12 is not expected to be present in biological fluids, one of ordinary skill in the art, based on the teachings of the cited prior art, would not have a reason to use any form of ADAM 12 to diagnose cancers of epithelial origin in the biological fluids as instantly claimed, let alone have a reasonable expectation of success in doing so.

The substitution of various tumor tissue samples taught by Iba et al. with the colon-associated fluids of Berger et al. would not have yielded a predictable result. Berger et al. is focused on the use of colon cells and colon-associated fluids for detecting colon cancer, and has not provided any reason for detecting cancers of epithelial origin, other than colon cancer, using the biological samples recited in the instant claims. The instant claims exclude detection of colon

cancers. Based on the teachings of Iba et al., a skilled artisan would conclude that neither form of ADAM 12 can be used in a method directed to the detection and/or characterization of cancer using body fluids because the secreted form of ADAM 12 cannot differentiate between normal and tumor tissue while the membrane-bound form of ADAM 12 is not expected to be present in the instantly claimed biological fluids. MPEP §2141.02(VI) clearly sets forth that “a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention (emphasis original). By ignoring the converse teaching of Iba et al., the Office is selectively focusing on certain teachings of the prior art and ignoring others.

The Office Action states that “[n]otwithstanding, it is art known that cancer cells abrogate organs, vasculature, and would be present in fluids, such as sera and blood. Consequently, both forms of ADAM 12 would have a high propensity to be detected” (Office Action at page 5).

There is no teaching or suggestion in the cited references which supports the contention that cancer cells are present in fluids, such as sera and blood, and that both forms of ADAM 12 would have a high propensity to be detected. The Office has not provided any evidence to support this conclusion, as is required. MPEP § 2144.03 . If the Office wishes to contend that cancer cells are present in fluids such as sera and blood by means of official notice, then Applicant notes the requirements for this: “Official notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known.” MPEP § 2144.03 .

Moreover, even if the Office were to present evidence demonstrating that cancer cells are sometimes present in fluids such as sera and blood, and that both forms of ADAM 12 may be detected, it is not sufficient to render obvious the instant claims. In the absence of a teaching that ADAM 12 found in bodily fluids can be used for diagnostic and prognostic evaluation of cancers of epithelial origin, there would be no reasonable expectation of success.

“[A] patent composed of several elements is not proved obvious merely by demonstrating that each element was, independently, known in the prior art”. KSR International Co. v. Teleflex Inc., 550 U.S. 398 (2007), 82 USPQ2d 1385 (2007). “The fact that a claimed product is within the broad field of the prior art and one might arrive at it by selecting specific items and conditions does not render the product obvious in the absence of some directions or reasons for making such

selection.” Ex parte Kuhn, 132 USPQ2d 1958 (Bd App 1961). A reasonable expectation of success is required to support a conclusion that the claimed invention would have been obvious. MPEP § 2143.02. Because the prior art combination would not have yielded predictable results to one of ordinary skill in the art, the cited references do not render the instant claims obvious.

Accordingly, withdrawal of this rejection is respectfully requested.

Claims 1, 3, 4, 6, 7, 9-16 and 20-37 are rejected under 35 U.S.C. §103(a) as being unpatentable over Iba et al. (Am J. Pathol. 154(5):1489-501, May 1999), and further in view of WO 01/66557 A1 (published 13 September 2001/IDS reference number 3 submitted May 25, 2010) and Berger et al. (US Patent Application Publication No. 2003/0148410 A1, filed November 21, 2002).

The Office Action contends that “[i]t would have been prima facie obvious to one of ordinary skill in the art at the time the claimed invention was made to combine all the teachings of all the documents to assay a plethora of biological samples for ADAM 12 particularly a urine, blood or serum”, and that “[o]ne of ordinary skill in the art would have been motivated to do so with a reasonable expectation of success by the teachings of Berger” (Office Action at page 10).

Applicant respectfully disagrees and requests reconsideration of this rejection. As discussed in response to the obviousness rejection above, in light of the teachings of Iba et al., a skilled artisan would conclude that ADAM 12 cannot be used in a method directed to the detection and/or characterization of cancer using body fluids since the secreted form of ADAM 12 cannot differentiate between normal and tumor tissue, while the membrane-bound form of ADAM 12 is not expected to be present in biological fluids. Thus, one of ordinary skill in the art, based on the teachings of the cited prior art, would not have a reason to use any form of ADAM 12 to diagnose cancers of epithelial origin in the biological fluids as instantly claimed, let alone have a reasonable expectation of success in doing so.

In addition, no teaching or suggestion is found in the cited references which supports the contention that cancer cells are present in fluids, such as sera and blood, and that both forms of ADAM 12 would have a high propensity to be detected. Even if the Office were to present evidence demonstrating that cancer cells are sometimes present in fluids such as sera and blood, and

that both forms of ADAM 12 may be detected, it is not sufficient to render obvious the instant claims as there is no reasonable expectation of success.

In light of the converse teaching of Iba et al., one of ordinary skill in the art would not have been motivated to combine the teachings of the cited documents, simply because Berger is focused on the use of colon cells and colon-associated fluids for detecting colon cancer. These deficiencies are not addressed by WO 01/66557.

WO 01/66557 relates to ADAM polypeptides, isolated nucleic acids and antibodies. According to the Office Action, the WO document teaches that antibodies directed to the ADAM 12 protein are used for the diagnosis of cancers, such as gastric, ovarian, lung, liver, breast and bladder, in a biological sample, which includes body fluids and tissue biopsies (Office Action at page 9).

Applicant respectfully disagrees. As discussed above, established case law states that “[t]he fact that a claimed product is within the broad field of the prior art and one might arrive at it by selecting specific items and conditions does not render the product obvious in the absence of some directions or reasons for making such selection.” Ex parte Kuhn, 132 USPQ2d 1958 (Bd App. 1961). A reasonable expectation of success is required to support a conclusion that the claimed invention would have been obvious. MPEP § 2143.02. Furthermore, the Office is not entitled to use the claim as a “frame” and to employ “individual, naked parts of separate prior art references...as a mosaic to recreate a facsimile of the claimed invention.” W. L. Gore & Assoc., Inc. v. Garlock, Inc., 721 F.2d 1540, 1552 (Fed. Cir., 1984). WO 01/66557 does not teach a method for detecting cancers of epithelial origin using the biological samples as instantly claimed.

In conclusion, because the prior art combination would not have yielded predictable results to one of ordinary skill in the art, the cited references do not render the instant claims obvious.

Accordingly, withdrawal of this rejection is respectfully requested.

Double Patenting Rejection

The provisional rejection of claims 1, 3, 4, 6, 7, 9-16 and 20-27 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 21, 23 and 42 of copending Application No. 12/085,134 (US Patent Application Publication No. 20090215109, filed April 14, 2009) is maintained.

The rejection is a provisional one since claims 21, 23 and 42 of copending Application No. 12/085,134 have not been found allowable. Applicant will address this rejection once an indication of allowable subject matter is received. Applicant respectfully requests that this rejection be held in abeyance until an indication of allowable subject matter is received.

CONCLUSION

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, the Director is hereby authorized to charge any deficiency or credit any overpayment in the fees filed, asserted to be filed or which should have been filed herewith to our Deposit Account No. 23/2825, under Docket No. C1285.70006US01.

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Respectfully submitted,

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